ABSTRACT

A computationally efficient channel estimation technique for use within an orthogonal frequency division multiplexing (OFDM) communication system determines coefficients of a channel transfer function by calculating the dot products

5   of a pilot vector and a plurality of interpolation vectors. One dot product is preferably calculated for each subcarrier of interest within the system. The pilot vector is extracted from an OFDM symbol received from a communication channel. In a preferred approach, a number of interpolation vectors are precalculated and stored within a communication device for subsequent use during channel estimation and

10   equalization operations. The technique is highly flexible and can be implemented using, for example, a variable user block size or a variable pilot vector size.